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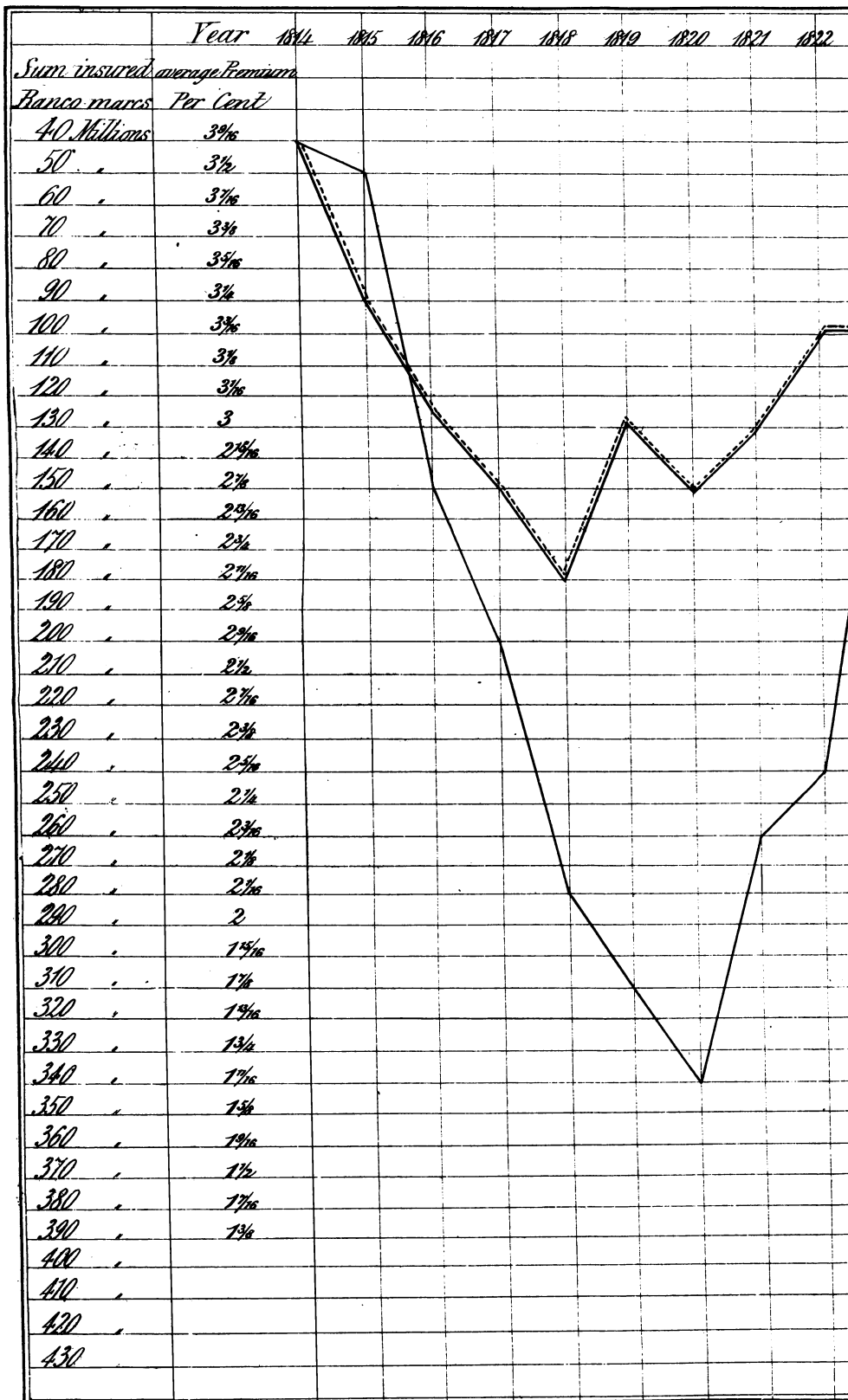
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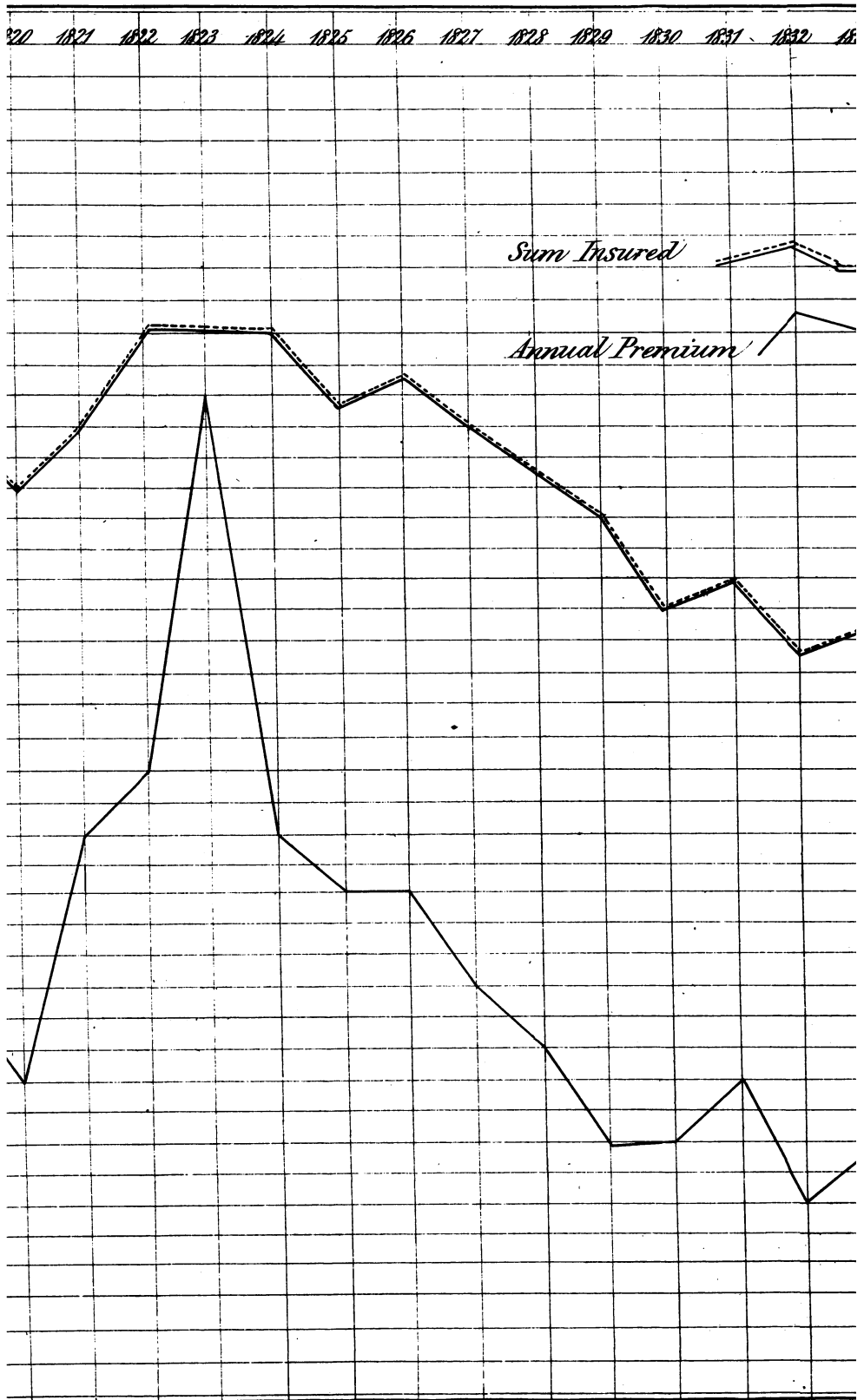
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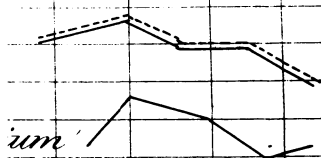
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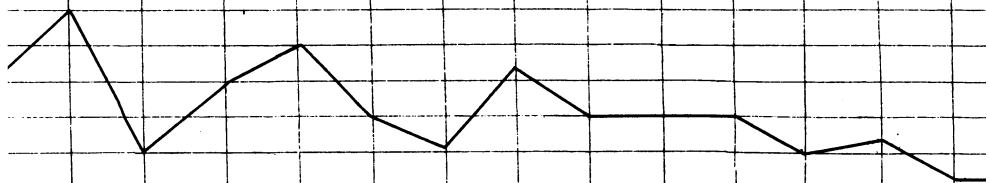
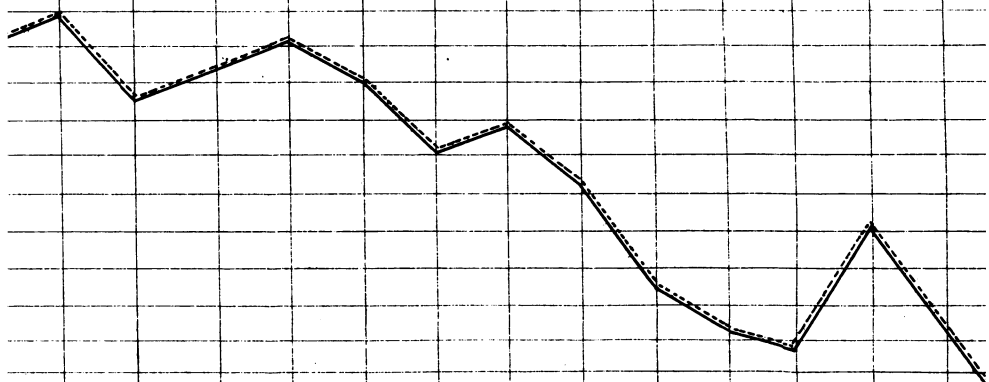




1831 1832 1833 1834 1835 1836 1837 1838 1839 1840 1841 1842 1843

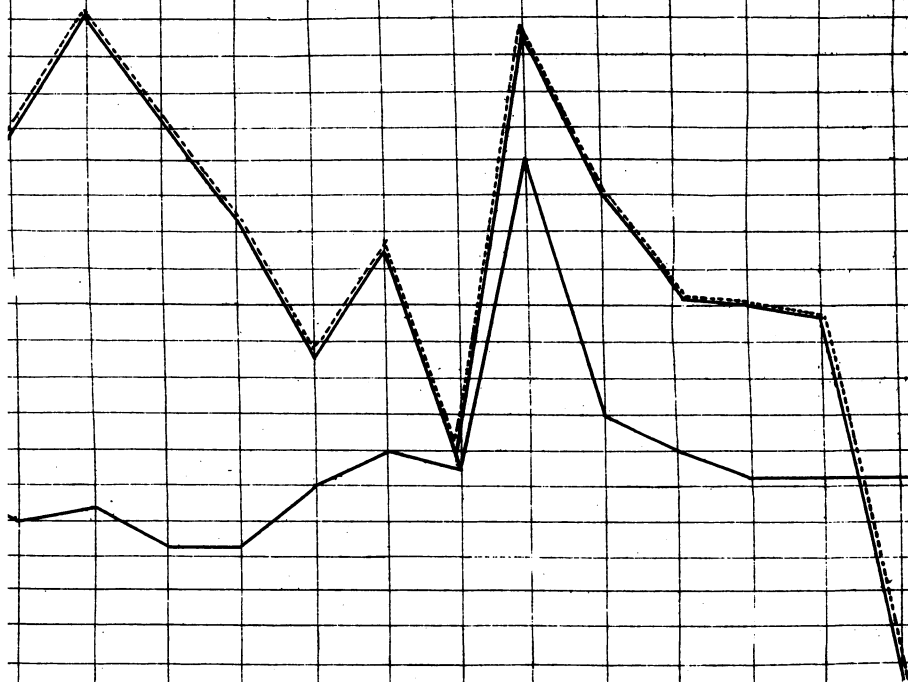


DIACRAM. Shewing the re
sum insured by
each year fro.
with the Table
given in Ba



1 1842 1843 1844 1845 1846 1847 1848 1849 1850 1851 1852 1853

Shewing the relation of the annual premium to the sum insured by Marine Insurances in Hamburg in each year from 1842 to 1853 inclusive, corresponding with the Table on P. 244. The Sums Insured are given in Banco-marks ($13\frac{1}{2} = \text{£}1$.)



An Inquiry into the Marine Insurance of Hamburg. By WILHELM LAZARUS, Esq., Foreign Correspondent of the Institute of Actuaries.

WHEN I began to direct my particular attention to the balance-sheets of the Hamburg Marine Insurance Societies, I hoped that a minute examination would lead to conclusions of general interest, and enable us to judge of the risks and state of navigation in general. I hoped that the collection of data and the comparison of the different balance-sheets would not offer great difficulties, and that my examinations might embrace a long period. My hopes have not been fulfilled. I perceived very soon that the work would be very troublesome, and that it would be difficult to form a complete collection of balance-sheets. There were none at the Public Commercial Library, and it was only by the aid of private friends that I at length succeeded in forming a complete collection of the balance-sheets since 1847. Thus I was obliged to limit my comparisons to the years 1847-53; and I think this is the principal reason why the law which governs the events cannot be deduced, and why no general conclusions can be drawn.

Nevertheless, I have finished this labour. The results are different from what I expected when I commenced. The facts which ought to form the foundation of my conclusions have become the principal, and it is only since 1847 that I can give a true representation of the Hamburg marine insurance business.

The large sums yearly insured in Hamburg, the number of Societies engaged in this branch, the capital employed, will justify, I hope, at least, this work—the more so, as the data given by others are very insufficient, either from being inexact, or from omitting some of the particulars. I shall mention these data, in order to compare them with the results which I have found.

The number of Marine Insurance Societies in Hamburg was 18 in 1836, rose to 24 in 1846, fell to 22 in 1849, and again rose to 23 in 1853. Amongst these there are three Societies which take fire insurances also: the Patriotische Assecuranz Compagnie, the Neue Funfte Assecuranz Compagnie, and the See und Feuer Assecuranz Compagnie. The latter renounced fire insurance at the end of 1852, and now undertakes only marine insurances, under the name of the Neptunus Insurance Compagnie. The fire insurances of these three Societies are included in the balances, and I had first to extract this branch.

TABLE A.—Fire Insurance, 1843-1853.

Year.	(A) Sum Insured.	(B) Reserved Sum.	(C) Income of Premium.	(D) Income of Interest.	(E) Total Amount.	(F) Loss.	(G) Brokerage, &c.	(H) Reserves for current risk and unsettled claims.	(J) Total.	(K) Profit.	(L) Dividend.
<i>Patriotische Assecuranz Compagnie.</i>											
1843	Banco marks. 30,863,165	Banco marks. 100,000	Banco marks. 117,263 4	Banco marks. 4,000	Banco marks. 221,263 4	Banco marks. 13,014 10	Banco marks. 5,243 10	Banco marks. 125,000	Banco marks. 143,263 4	Banco marks. 78,000	Banco marks. 20,000
1844	28,341,005	125,000	104,248 14	5,000	234,248 14	4,097 4	4,151 10	160,000	168,248 14	66,000	20,000
1845	27,541,880	160,000	88,038	6,000	254,038	60,474 2	4,563 14	160,000	225,038	29,000	20,000
1846	22,610,570	160,000	70,575 3	6,000	236,575 3	14,270	3,305 3	200,000	217,575 3	19,000	20,000
1847	23,844,815	200,000	73,688 13	10,000	283,688 13	32,930	3,688 13	250,000	253,688 13	30,000	30,000
1848	21,300,545	250,000	74,086 4	10,000	334,086 4	32,930	4,156 4	270,000	307,086 4	27,000	20,000
1849	26,043,125	270,000	71,550 4	10,000	351,550 4	..	4,550 4	280,000	284,550 4	67,000	40,000
1850	26,404,985	280,000	76,550 14	10,000	366,550 14	43,880 8	4,670 6	300,000	348,550 14	18,000	18,000
1851	22,016,085	300,000	67,333 8	12,000	379,333 8	8,291 14	4,041 10	300,000	312,333 8	67,000	40,000
1852	21,733,450	300,000	77,018 7	12,000	389,018 7	8,455 11	4,562 12	300,000	313,018 7	76,000	40,000
1853	21,520,765	300,000	62,997 7	12,000	374,997 7	6,820 3	4,177 4	300,000	310,997 7	64,000	60,000
<i>Neue Funfte Assecuranz Compagnie.</i>											
1843	34,117,840	..	177,944 3	2,000	179,944 3	53,984 1	9,557 8	28,402 10	91,944 3	88,000	..
1844	28,541,825	28,402 10	132,539 11	4,500	165,442 5	15,357 14	7,179 14	28,904 9	51,442 5	114,000	..
1845	27,599,007	28,904 9	123,543	4,000	156,447 9	87,614 2	6,535 8	38,297 15	132,447 9	24,000	..
1846	21,769,330	38,297 15	110,357 2	4,000	152,655 1	34,395 4½	6,636 7	39,623 5½	80,655 1	72,000	..
1847	20,644,405	39,623 5½	92,353 15	4,000	135,977 4½	11,824 5	5,689 12½	28,463 3	45,977 4½	90,000	..
1848	19,266,639	28,463 3	80,811 11	4,000	113,274 14	45,272 2	4,212 3	21,790 9	71,274 14	42,000	..
1849	17,738,991	21,790 9	76,675 7	4,000	102,466 4	31,033 1	4,751 9	82,681 6	118,466 4	(Loss) 16,000	..
1850	19,320,733	82,681 6	78,664 14	4,000	165,346 4	19,198 13	4,172 13	85,974 10	109,346 4	56,000	..
1851	10,239,865	86,993 7	70,770	4,000	161,763 7	5,209 10½	4,944 15½	132,608 13	142,763 7	19,000	..
1852	14,300,895	132,608 13	63,206	6,000	201,814 13	18,182 7	4,495 9	139,136 13	161,814 13	40,000	..
1853	13,602,113	139,136 13	64,748	6,000	209,884 13	13,450 5	4,046 15	124,387 9	141,884 13	68,000	..
<i>See und Feuer Assecuranz Compagnie.</i>											
1843	12,623,727	..	53,650 10	1,000	54,650 10	18,710 11	2,783 1	6,156 14	27,650 10	27,000	..
1844	11,792,644	6,156 14	50,764 12½	2,000	58,921 10½	1,280 9	2,691 1½	10,500	14,421 10½	44,500	..
1845	10,834,199	10,500	37,132 14	1,600	49,232 14	30,105 7	2,162 15	11,364 8	43,632 14	5,600	..
1846	6,634,222	11,364 8	23,410 10	1,200	35,975 2	2,080 14	1,529 12	8,364 8	11,975 2	24,000	..
1847	7,373,727	8,364 8	22,978 6	1,200	32,542 14	5,849 14	1,333 15	6,959 1	14,142 14	18,400	..
1848	6,077,395	6,959 1	19,133 12	1,000	27,092 13	6,675 7½	1,563 12	7,853 9½	16,092 13	11,000	..
1849	4,832,155	7,853 9½	17,029 15	800	25,683 8½	427 7	974 1	82	1,483 8½	24,200	..
1850	5,380,800	..	16,699 6	800	17,581 6½	8,050 ½	1,331 6	..	9,381 6½	8,200	..
1851	3,837,780	..	10,433 2	..	10,433 2	4,573 8	691 14	67 12	5,333 2	5,100	..
1852	1,324,015	67 12	3,674 3	..	3,741 15	2,000	241 15	..	2,241 15	1,500	..

The Table A contains the results of the fire insurance branch from 1843 to 1853. The columns A, B, C, F, H, are taken from the balance-sheets; the columns D and G are calculated. I thought it would be just to include therein a part of the interest received, because these Companies gain a portion of their interest by fire insurance premiums and reserves. Brokerage (Col. G) is taxed 5 to 7 per cent. of the receipt of premiums. Columns E, I, K, follow from the other; and column L, dividends, has been given, as a large proportion of them depends upon the results of fire insurance.

Having thus separated the fire insurance, we shall be at liberty to treat the three Companies before mentioned as if they were Marine Insurance Societies exclusively. On another occasion, I hope, I may treat separately the fire insurance branch; this examination refers only to marine insurance.

Year.	Number of Societies.	Number of Shares.	Subscribed Capital.	Paid-up Capital.
1836	18	3,335	Banco marcs.	Banco marcs.
1837	18	3,335		
1838	19	3,536		
1839	19	3,545		
1840	20	3,705		
1841	20	3,705		
1842	21	3,865	13,245,000 13,845,000 13,845,000 14,625,000 14,025,000 13,485,000 13,485,000 13,485,000 13,485,000 13,485,000 14,025,000	2,849,000 2,969,000 2,969,000 3,125,000 3,005,000 2,897,000 2,897,000 2,897,000 2,897,000 2,897,000 3,005,000
1843	22	4,015		
1844	23	4,215		
1845	23	4,215		
1846	24	4,475		
1847	23	4,275		
1848	22	4,095		
1849	22	4,095		
1850	22	4,095		
1851	22	4,095		
1852	22	4,095		
1853	23	4,275		

The dates from 1836 to 1842 are according to the publications of the Handelsstatistical Bureau, and from 1842 to 1846 according to the annual returns of Mr. Goverts. The number of the Societies and the capital engaged in this business have increased, and probably have not yet reached the maximum.

Before I proceed to analyze the data furnished by the balance-sheets, it will be necessary to explain the mode of forming these balances. Each of the Hamburg Marine Insurance Societies publishes every year, in April or May, a balance-sheet of the business done, and it must be acknowledged that it is given in a precise and clear form. The balance-sheet contains two parts; we may

call them gross balance and net balance. The gross balance refers to the last year (1st Jan. to 31st Dec.), and contains the amount insured, amount of premiums, amount of interest obtained, and a reserved sum from the net balance for unsettled claims of the past year, the payment of interest to the shareholders, for *ristorno* for reassured sums, for average and losses, expenses of management, brokerage, and a sum to be reserved for averages and losses unpaid, and for the current risk of which the amount and the premium paid is stated. The result of this balance (gross) is generally considered as the real one, and forms the foundation of the statements and conclusions concerning Hamburg marine insurance. I cannot agree with this; for in the next balance-sheet is published the actual portion of the reserved sums which was required to cover the actual losses and averages, and the small amount of reserve which remains to be carried over to the next balance, when nearly all the business of that year is settled. This balance, which I call the net one, and which shows the true result, precedes another gross balance of the following year in each statement. I have added to each gross balance the net balance relating to the same year, thus ending with the net result; whilst in most statements the net and gross balance of different years have been added together when this subject has been discussed.

From the statements of Mr. Goverts, including those of the private underwriters and the agencies of some foreign Companies established in Hamburg, I give the following table:—

Year.	Sum Insured.	Amount of Premiums.	Average Premium per cent.	Year.	Sum Insured.	Amount of Premiums.	Average Premium per cent.
	Banco marcs.	Banco marcs.			Banco marcs.	Banco marcs.	
1814	42 millions	1,489,000	3·5625	1834	189 millions	3,079,000	1·625
1815	87 "	3,058,000	3·5	1835	195 "	2,928,000	1·5
1816	124 "	3,576,000	2·875	1836	220 "	3,229,000	1·47
1817	151 "	3,862,000	2·5625	1837	215 "	3,419,000	1·594
1818	176 "	3,628,000	2·0625	1838	224 "	3,362,000	1·5
1819	129 "	2,231,000	1·875	1839	251 "	3,769,000	1·5
1820	151 "	2,544,000	1·6875	1840	267 "	4,000,000	1·5
1821	129 "	2,822,000	2·1875	1841	272 "	3,915,000	1·4375
1822	98 "	2,273,000	2·3125	1842	239 "	3,513,000	1·47
1823	100 "	3,059,000	3·0625	1843	265 "	3,729,000	1·406
1824	101 "	2,200,000	2·1875	1844	294 "	4,130,000	1·406
1825	124 "	2,562,000	2·0625	1845	331 "	4,969,000	1·5
1826	114 "	2,348,000	2·0625	1846	304 "	4,746,000	1·5625
1827	129 "	2,425,000	1·875	1847	361 "	5,530,000	1·531
1828	142 "	2,494,000	1·75	1848	250 "	5,152,000	2·0625
1829	160 "	2,533,000	1·5833	1849	281 "	4,569,000	1·625
1830	190 "	2,969,000	1·5625	1850	313 "	4,886,000	1·5625
1831	181 "	3,056,000	1·6875	1851	317 "	4,851,000	1·531
1832	203 "	2,917,000	1·4375	1852	331 "	5,072,000	1·531
1833	199 "	3,105,000	1·5625	1853	422 "	6,467,000	1·531

The sum insured shows a constant tendency to increase, in accordance with the general increase of commerce. From 42 millions in 1814, we come to 422 millions in 1853. At the same time it proves a mirror to the history of commerce and politics, and reflects all considerable events. Nevertheless there are some oscillations which cannot be explained in this way, and which seem to indicate a connection of the average premium with the sum insured, of which I shall speak more largely presently.

The average premium is not quite exact, because the amount of premium is reduced in the balance-sheet of some Companies by the *ristorno*, which is deducted from the amount of premium. The net sum is then stated as receipts, and the *ristorno* omitted in the expenditure. In such cases Mr. Goverts, in his publication, gives the net premium, which I think incorrect; for at all events a *ristorned* insurance represents a business—1, because the *ristorno* is not equal to the premium paid; 2, because brokerage is paid. The *sums insured* not being diminished by the *ristorned* sums, the average premium will appear lower than it really is. The table, nevertheless, is sufficient to show that a tendency to lessen the average premium prevails; and we should be glad if we were allowed to consider this as the consequence of improvements in science, and of a diminution of the dangers to navigation. Although I do not doubt that this progress of science and the increase of steam navigation have co-operated in a high degree to the abatement of the average premium, I think we must not consider the premium taken the true expression of the value of the risk.

Prices are regulated by the proportion of supply to demand, and so also the premiums of marine assurance. The influence of the competition of other ports can be proved by comparing the sums insured and the average premium, and it explains the fluctuations of the former. An increase of the average premium coincides with a decrease of the sum insured; and even in years in which no reason can be suggested which will explain both, may we not infer that a connection exists between the sum insured and the rising of the average premium? The assured always looks for the lowest premium; and if it is higher in Hamburg than in other places, he will go elsewhere, and the sum insured in Hamburg diminishes, whilst low premiums there occasion a rise in the amount insured. The following table will prove this interesting fact, and seems even to indicate a connection between the degrees of the fluctuations of the sum insured and the average premium—which supports my assumption. It is to be observed, that the

tendency to increase in the sums assured corresponds with the diminution in the average premium.

Year.	Average Premium per cent.	Sum Insured.
		Banco marcs.
1814 to 1820	Decrease from 3·5625 to 1·6875	Increase from 42 to 151 millions
1820—1823	Increase „ 1·6875 „ 3·0625	Decrease „ 151 „ 100 „
1823—1830	Decrease „ 3·0625 „ 1·5625	Increase „ 100 „ 190 „
1830—1831	Increase „ 1·5625 „ 1·6875	Decrease „ 190 „ 181 „
1831—1832	Decrease „ 1·6875 „ 1·4375	Increase „ 181 „ 203 „
1832—1834	Increase „ 1·4375 „ 1·625	Decrease „ 203 „ 189 „
1834—1836	Decrease „ 1·625 „ 1·47	Increase „ 189 „ 220 „
1836—1837	Increase „ 1·47 „ 1·594	Decrease „ 220 „ 215 „
1837—1841	Decrease „ 1·594 „ 1·4753	Increase „ 215 „ 272 „
1841—1842	Increase „ 1·4753 „ 1·47	Decrease „ 272 „ 239 „
1842—1844	Decrease „ 1·47 „ 1·406	Increase „ 239 „ 294 „
1844—1846	Increase „ 1·406 „ 1·5625	Decrease „ 294 „ 304 „
1846—1847	Decrease „ 1·5625 „ 1·531	Increase „ 304 „ 361 „
1847—1848	Increase „ 1·531 „ 2·0625	Decrease „ 361 „ 249 „
1848—1853	Decrease „ 2·0625 „ 1·531	Increase „ 249 „ 422 „

The year 1819 forms an exception which seems sufficiently explained by the commercial crisis.

			Banco marcs.
1818	Premium, 2·06	Sum Insured,	176,000,000
1819	„ 1·87	„	129,000,000
1820	„ 1·69	„	151,000,000

The exception of the year 1823 is very insignificant. The decrease of the sum insured in 1826, whilst the average premium remains constant, is in accordance with my assumption. The exception of 1845 shall be explained afterwards. A graphic table of this subject is annexed, and will clearly exhibit this connection.

I can state the sums insured with the Hamburg Companies since 1836: they are

Year.	Sum Insured.	Year.	Sum Insured.
	Banco marcs.		Banco marcs.
1836	179,621,800	1845	304,143,400
1837	195,667,000	1846	278,040,600
1838	219,163,600	1847	333,867,603
1839	246,281,400	1848	235,052,491
1840	260,696,300	1849	258,247,353
1841	266,375,200	1850	278,157,726
1842	232,181,400	1851	278,917,603
1843	248,977,800	1852	288,312,516
1844	270,894,700	1853	357,430,297

The consequences of the great fire in 1842—of the crisis, 1846—and of the revolution, 1848—are most striking.

Year.	Amount of Premium with the Hamburg Companies.	Average Premium per cent.
	Banco marcs.	
1847	5,123,155 5½	1·534
1848	4,901,677 9½	2·085
1849	4,270,540 5	1·654
1850	4,352,269 14	1·565
1851	4,347,343 2½	1·559
1852	4,458,363 3	1·546
1853	5,526,186 3½	1·546

In the publications of Mr. Goverts and of the Handelsstatistischen Bureau these numbers are given incorrectly, some *ristorno* being deducted.

Year.	Handelsstatistisches Bureau.		Mr. E. F. Goverts.	
	Amount of Premium.	Average per cent.	Amount of Premium.	Average per cent.
	Banco marcs.		Banco marcs.	
1836	2,486,170	1·38		
1837	3,048,839	1·56		
1838	3,222,625	1·47		
1839	3,570,953	1·45		
1840	3,776,653	1·45		
1841	3,746,648	1·41		
1842	3,270,711	1·40	3,472,840	1·48
1843	3,444,451	1·38	3,564,520	1·43
1844	3,726,411	1·38	3,848,220	1·42
1845	4,461,454	1·47	4,600,990	1·51
1846	4,174,543	1·50	4,413,790	1·5625
1847	4,939,245	1·48	5,122,700	1·53125
1848	4,778,420	2·02	4,901,680	2·08
1849	4,025,956	1·56	4,270,450	1·625
1850	4,175,606	1·50	4,352,170	1·5625
1851	4,171,531	1·50	4,347,250	1·53125
1852	4,286,628	1·49	4,458,840	1·53125
1853	5,528,724	1·55	5,526,040	1·53125

A comparison of the sums insured and the average premium will prove the before-mentioned connection.

Year.	Sum Insured.	Average Premium per cent.	Year.	Sum Insured.	Average Premium per cent.
	Banco marcs.			Banco marcs.	
1842	233,181,400	1·49	1848	235,052,500	2·08
1843	248,977,800	1·43	1849	258,247,400	1·65
1844	270,894,700	1·43	1850	278,157,700	1·56
1845	304,143,400	1·51	1851	278,917,600	1·56
1846	278,040,600	1·58	1852	288,312,500	1·54
1847	333,867,600	1·53	1853	357,430,300	1·55

The deviation of the year 1845, showing an increase of the sum insured and a simultaneous increase in the average premium, can be explained by the disastrous activity of the Assecuranz Compagnie of 1844, which failed in 1846. This Company insured in

	Banco marcs.		Banco marcs.	Per cent.
1844	22,838,900	Premium,	315,120	Average, 1·38
1845	25,825,800	„	469,200	„ 1·82

The catastrophe which happened to this Company will justify the supposition that a considerable sum was insured in 1845 with this Company at high rates of premium—the average premium of this Company being 1·82 per cent., the average in general 1·51 per cent.—and for risks which would not have been underwritten at all in Hamburg had it not been for this Company; and thus the year 1845 would have had a smaller amount insured and a lower average premium. The average premium of 1845, the business of the Assecuranz Compagnie of 1844 excluded, is 1·48 per cent., and would be still lower if we could keep in view those policies underwritten by this Company at low rates of premium, being ordinary good risks which any Company would have accepted.

Reserves for unsettled losses carried forward from the last net balance :—

Year.	Banco marcs.
1847	195,637 9
1848	264,367 13½
1849	318,069 12
1850	232,613 7
1851	260,446 9½
1852	153,778 1
1853	163,957 13

With the view of considering each year separately, we cannot mention the sums relating to former years as receipts. The sums are small, and depend on so many factorials that interesting conclusions can hardly be obtained therefrom.

On the credit side there remains only the interest obtained from capital, premiums, and reserves. These sums depend on the current rate of interest, and on the amount of capital, premium, and reserved fund. The interest paid by the Companies to the shareholders is 4 per cent. of the paid-up capital.

Year.	Interest received.	Interest paid.	Surplus of receipts.	Surplus of payment.
	Banco marcs.	Banco marcs.	Banco marcs.	Banco marcs.
1847	172,624 12	105,800	66,824 12	43,202 9
1848	119,897 14	115,880	4,017 14	
1849	72,677 7	115,880	„	
1850	120,255 5½	113,480	6,775 5½	
1851	126,561 6½	115,280	11,281 6½	
1852	147,817 3½	115,880	31,937 3½	
1853	146,812 14	113,240	33,572 14	
		Total	154,409 7½	43,202 9

In 1847 the Patriotische Assecuranz Compagnie only paid 6,400 banco marcs instead of 20,800 banco marcs; in 1850 the See Assecuranz Compagnie of 1850 only paid 1,200 banco marcs—in 1851, 3,000 banco marcs—instead of 3,600 banco marcs. In 1853 the See Assecuranz Compagnie of 1846 paid no interest, instead of 3,600 banco marcs; the Hansa Assecuranz Compagnie, 1,560 banco marcs instead of 3,120 banco marcs; the Versicherungs Verein, 1,800 banco marcs instead of 3,600 banco marcs.

Year.	Receipt of Interest.			Payment of Interest.		
	For each 100 Thalers sum insured.	For each 100 Thalers total income.	For each 100 Thalers paid-up capital.	For each 100 Thalers sum insured.	For each 100 Thalers total income.	For each 100 Thalers paid-up capital.
1847	0·052	3·260	5·74	0·032	1·998	3·52
1848	0·051	2·388	4·14	0·049	2·308	4·
1849	0·028	1·673	2·51	0·045	2·668	4·
1850	0·043	2·689	4·15	0·041	2·537	3·92
1851	0·045	2·829	4·37	0·041	2·577	3·98
1852	0·051	3·209	5·10	0·040	2·516	4·
1853	0·041	2·588	4·89	0·032	1·996	3·77

Year.	Profit of Interest.		Loss of Interest.	
	For each 100 Thalers sum insured.	For each 100 Thalers total income.	For each 100 Thalers sum insured.	For each 100 Thalers total income.
1847	0·020	1·262	0·017	0·995
1848	0·002	0·08		
1849	..	..
1850	0·002	0·152		
1851	0·004	0·252		
1852	0·011	0·693		
1853	0·009	0·592		

Year.	Total Income.	
	Amount.	For each 100 Thalers sum insured.
	Banco marcs.	
1847	5,295,780 1½	1·586
1848	5,021,575 7½	2·136
1849	4,343,217 12	1·682
1850	4,472,525 3½	1·608
1851	4,473,904 9	1·605
1852	4,606,180 6½	1·598
1853	5,672,999 1½	1·587

The income has risen constantly since 1849, notwithstanding the diminution of the average premium.

The payment of brokerage stated in the balance-sheets includes the brokerage for discounted bills, and for valuation of damaged goods, as well as for assurances effected. I have mentioned before that I have carried over a part of it to the fire insurance branch. The marine insurance brokerage paid by the underwriter is $\frac{1}{16}$ per cent. of the sum insured if the premium is less than 2 per cent., and $\frac{1}{4}$ per cent. if the premium is 2 per cent. or more.

Year.	Brokerage.	For each 100 Thalers sum insured.	For each 100 Thalers total income.
	Banco marcs.		
1847	260,814 $6\frac{1}{2}$	0·078	4·925
1848	209,799 $7\frac{1}{2}$	0·089	4·178
1849	202,629 $7\frac{1}{2}$	0·078	4·665
1850	219,756 7	0·079	4·914
1851	215,692 $5\frac{1}{2}$	0·077	4·821
1852	224,256 $4\frac{1}{2}$	0·078	4·869
1853	276,018 $8\frac{1}{2}$	0·077	4·865

The fluctuations in this table are insignificant. The maximum per centage on 100 thalers sum insured coincides with the minimum for 100 thalers total income, in 1848, which year shows the highest average premium. The maximum of payment for brokerage falls in 1853, the year with the greatest amount insured—the minimum, in 1849, the year with the smallest income.

The expenses of management seem dependent on the number of the Societies, and show only small fluctuations.

Year.	Expenses of Management.	For each 100 Thalers sum insured.	For each 100 Thalers total income.	Average for each Company.
	Banco marcs.			Banco marcs.
1847	238,086 2	0·071	4·496	10,352
1848	228,996 11	0·097	4·560	10,409
1849	234,431 11	0·091	5·398	10,656
1850	229,681 10	0·083	5·135	10,440
1851	229,336 15	0·082	5·126	10,424
1852	231,636 14	0·080	5·029	10,529
1853	245,310 $12\frac{1}{2}$	0·069	4·324	10,692

The conformity of the sums for *ristorno* and reinsurance is very surprising; the proportions to the sums insured and to the income are constantly becoming smaller, but I cannot decide whether this is accidental or based in the nature of commerce.

Year.	Ristorno and Reassurance.	For each 100 Thalers sum insured.	For each 100 Thalers total income.
	Banco marcs.		
1847	182,140 8½	0·055	3·439
1848	230,267 12	0·098	4·586
1849	177,134 7½	0·069	4·078
1850	175,120 1	0·063	3·915
1851	174,149 12½	0·062	3·893
1852	170,210 8½	0·059	3·695
1853	192,985 6½	0·054	3·402

In the publications of the Handelsstatistischen Bureau of 1853, the premium is stated without the *ristorno* and reinsurance; and, comparing this with the publications of Mr. Goverts, I find—

Year.	Ristorno and Reassurance.	For each 100 Thalers sum insured.	For each 100 Thalers total income.
	Banco marcs.		
1842	202,129	0·088	5·820
1843	120,769	0·050	3·388
1844	121,809	0·045	3·165
1845	139,536	0·046	3·033
1846	239,247	0·068	5·421

The losses from nonpayment of premiums are very insignificant, although the premiums are paid only twice a year, in January and July. The sums being so small, I have omitted this column, and included it in “damages” stated in the gross balance: they are,

Year.	Banco marcs.
1847	4,758 3½
1848	2,607 9½
1849	810 13
1850	796 2½
1851	1,544 2½
1852	781 4½
1853	663 5½

Before we proceed to the consideration of damages, we will add the different articles together.

	For each 100 Thalers sum insured.	For each 100 Thalers total income.
Brokerage	0·077 to 0·089	4½ to 5½
Expenses of management .	0·069 „ 0·091	4½ „ 5½
<i>Ristorno</i> and reinsurance .	0·054 „ 0·098	3½ „ 4½
	0·200 to 0·278	12½ to 15½

The total amount of damages in every year is composed of—

damages stated in the gross balance; loss of premiums remaining unpaid; damages stated in the net balance relating to the same year; amount to be reserved for unsettled claims, deducting therefrom the sum reserved for unsettled claims of former years.

Year.	Total amount of Damages.	For each 100 Thalers sum insured.	For each 100 Thalers total income.
	Banco marcs.		
1847	3,590,159 0½	1·075	67·793
1848	4,216,731 9	1·794	83·971
1849	3,109,982 2	1·204	71·606
1850	3,892,187 1½	1·399	87·025
1851	3,436,045 8	1·232	76·801
1852	4,460,696 11½	1·547	96·841
1853			

Great fluctuations are found here, as might have been expected, the more so as this period proved very unfavourable to marine insurance. But we can record as a fact for congratulation, that in no year was the income exceeded by the losses, and that even in 1852 the receipt of premium is only about 2,500 banco marcs less than the claims. I think no better testimony could be given to the solidity of our marine insurance business. It is very surprising that good years and bad ones alternate with great regularity; and adding two years—

	1847-48	1849-50	1851-52
Damages . . .	77·874	81·205	89·677 per cent. of income,

the average of the whole period is 1·326 per cent. of the insured sum, 82·709 per cent. of the receipt of premium. The difference of the maximum, 1·794 per cent., and the minimum, 1·075 per cent., is 0·719 per cent.; whilst the difference of the maximum of the average premium in this period, 2·085 per cent., and the minimum, 1·534 per cent., is only 0·551 per cent. These numbers do not allow of any law being deduced from them, and I think the laws must be too complicated to be observed in this short period. Nevertheless the subject is interesting enough to justify a closer examination. The statements of others with reference to the period before 1847 do not offer direct means for comparison, they being framed, as mentioned before, on other principles.

The numbers from which we have just calculated the total amount of claims are, separately—

Year.	I. Amount of claims stated in the gross balance.	II. Amount of claims stated in the net balance.	III. Reserved sum to be brought over for unsettled claims.	IV. Reserved sum for unsettled claims of former years.
	Banco marcs.	Banco marcs.	Banco marcs.	Banco marcs.
1847	1,921,955 4½	1,599,473 7½	264,367 13½	195,637 9
1848	1,987,112 3	2,175,917 7½	318,069 12	264,367 13½
1849	1,809,152 15½	1,386,285 7½	232,613 7	318,069 12
1850	2,165,432 6½	1,698,921 8½	260,446 9½	232,613 7
1851	1,781,477 10½	1,761,236 6	153,778 1	260,446 9½
1852	2,501,090 0½	1,949,426 15	163,957 13	153,778 1
1853	2,371,884	..	..	163,957 13

The difference of the proportion between columns I. and II. shows the years in which the heaviest losses must have occurred—viz., in spring in 1848, 1851, and in autumn in 1847, 1849, 1850, 1852; besides which, I believe that the settlement of claims is quicker in modern times.

Including the column III. in II., and deducting one half of column IV. from I., one half from II., we shall find—

Year.	Payments stated in the gross balance, first year.	Payments stated in the net balance, second year.
	Banco marcs.	Banco marcs.
1847	1,824,136 8	1,766,022 8½
1848	1,854,928 4	2,361,803 5
1849	1,650,118 1½	1,459,864 0½
1850	2,049,125 11	1,843,061 6½
1851	1,651,254 6	1,784,791 2
1852	2,424,201	2,036,459 11½
Total	11,453,763 14½	11,202,038 2

Year.	Per cent. of claims. Claims paid.		Per cent. of insured sum. Claims paid.		Per cent. of total income. Claims paid.	
	First Year.	Second Year.	First Year.	Second Year.	First Year.	Second Year.
1847	50·81	49·19	0·546	0·529	34·44	33·35
1848	43·99	56·01	0·789	1·005	36·94	47·03
1849	53·05	46·95	0·639	0·565	37·99	33·61
1850	52·65	47·35	0·736	0·663	45·82	41·21
1851	48·05	51·95	0·592	0·640	36·91	39·89
1852	54·35	45·65	0·841	0·706	52·63	44·21
1853	..	..	0·641	..	40·36	

Two sums are reserved in the gross balance—one for unsettled claims, and the other for the current risk. Deducting as before, from the reserved sum for unsettled claims, one half of that reserve relating to former years, we shall find—

Year.	Reserved for claims.	Reserved for current risk.	Total Amount Reserved.	Surplus over payments of claims.
	Banco marcs.	Banco marcs.	Banco marcs.	Banco marcs.
1847	1,328,521 14	1,133,340 10½	2,461,862 8½	695,840
1848	2,034,362 2½	949,281 2½	2,983,643 5	621,840
1849	1,249,078 6	985,085 10½	2,234,164 0½	774,300
1850	1,666,802	971,309 6½	2,588,111 6½	795,050
1851	1,494,405 7½	1,003,285 10½	2,497,691 2	712,900
1852	1,773,205 4	936,540 7½	2,703,745 11½	673,250
1853	1,867,238 15	1,196,299 6½	3,063,538 5½	

The same table, calculated for 100 thalers insured sum :—

Year.	Reserved for claims.	Reserved for current risk.	Total amount.	Surplus.
1847	0·398	0·339	0·637	0·208
1848	0·865	0·404	1·269	0·265
1849	0·484	0·381	0·865	0·300
1850	0·599	0·349	0·948	0·286
1851	0·536	0·360	0·896	0·256
1852	0·615	0·325	0·940	0·234
1853	0·522	0·335	0·857	

The same table, calculated for 100 thalers total income :—

Year.	Reserved for claims.	Reserved for current risk.	Total amount.	Surplus.
1847	25·09	21·40	46·49	13·14
1848	40·51	18·90	59·41	12·38
1849	28·76	22·68	51·54	17·83
1850	37·27	21·72	58·99	17·77
1851	33·40	22·43	55·83	15·93
1852	38·50	20·33	58·83	14·62
1853	32·91	21·09	54·00	

These tables prove more conformity and regularity than we might have expected.

Table of Current Risk at the period when the Gross Balance is formed (April or May of the succeeding year).

Year.	Amount of current risk.	Premium paid for the current risk.	Average Premium for the current risk.	Average Premium of the year.
	Banco marcs.	Banco marcs.	Banco marcs.	Banco marcs.
1847	9,992,685	359,736 7	3·59	1·534
1848	8,867,721	314,801 7	3·55	2·085
1849	9,336,018	297,115 3½	3·18	1·654
1850	9,758,695	328,851 10½	3·38	1·565
1851	9,120,978	304,870 8	3·34	1·559
1852	12,599,574	392,850 9	3·12	1·546
1853	12,826,672	417,775 2½	3·26	1·546

The average premium of the current risk is nearly constant, and seems independent of the average premium of the year. The current risk per cent. of sum insured was, in

1847	2.99	} Forming $\frac{1}{24}$ to $\frac{1}{36}$ part.
1848	.	.	.	.	3.77
1849	.	.	.	.	3.61
1850	.	.	.	.	3.51
1851	.	.	.	.	3.27
1852	.	.	.	.	4.37
1853	3.59	

The reserved sum for the current risk, compared with the amount of the latter, gives

Year.					Per cent.	
1847	11.34	} The small reserve of 1852 will be explained by the heavy losses paid in this year (nearly half a million banco marcs more than in the preceding years), and by the large sum to be reserved for unsettled claims.
1848	.	.	.	.	10.71
1849	.	.	.	.	10.55
1850	.	.	.	.	9.98
1851	.	.	.	.	11.
1852	.	.	.	.	7.38
1853	.	.	.	.	9.32

This reserve per cent. of total income—

1847	21.40	} About $\frac{1}{5}$ part.
1848	.	.	.	.	18.90
1849	.	.	.	.	22.68
1850	.	.	.	.	21.72
1851	.	.	.	.	22.43
1852	.	.	.	.	20.33
1853	21.09	

The surplus of these two reserves is called “verbesserung” (bettering). In the net balance it fluctuates from 621,840 banco marcs in 1848, to 795,050 banco marcs in 1850; per cent. of sum insured, from 0.208 in 1847, to 0.300 in 1849; per cent. of total income, from 12.38 in 1848, to 17.83 in 1849. Each of these reserves separately would not have been sufficient.

Year.	Reserved for claims.	Paid for claims, including further reserve.	Excess of payments.
	Banco marcs.	Banco marcs.	Banco marcs.
1847	1,328,521 14	1,766,022 8½	437,500 10½
1848	2,034,362 2½	2,361,803 5	327,441 2½
1849	1,249,078 6	1,459,864 0½	210,785 10½
1850	1,666,802	1,843,061 6½	225,259 6½
1851	1,494,405 7½	1,784,791 2	290,386 11½
1852	1,773,205 4	2,036,495 11½	263,290 7½

It is interesting to observe that the excess of payments is constantly decreasing, and might have been covered by the mere premium for the current risks since 1849.

Year.	Payment of claims and further reserves stated in the gross balance.	Per cent. of sums insured.	Per cent. of total income.
	Banco marcs.		
1847	4,285,999 0½	1·183	80·93
1848	4,838,571 9	2·058	87·35
1849	3,884,282 2	1·504	89·53
1850	4,637,238 1½	1·684	104·81
1851	4,148,945 8	1·488	91·74
1852	5,127,946 11½	1·781	111·46
1853	5,516,638 13½	1·498	94·36

In the publications of the Handelsstatistischen Bureau there is a column, "payments of claims" since 1836.

Year.	Payment of claims.	Per cent. of sum insured.	Numbers according to my calculation.
	Banco marcs.		Banco marcs.
1836	2,104,902	1·172	
1837	2,508,557	1·282	
1838	2,561,757	1·169	
1839	2,230,608	1·140	
1840	3,062,503	1·151	
1841	3,053,917	1·146	
1842	2,704,385	1·162	
1843	3,355,419	1·347	
1844	3,515,090	1·283	
1845	5,252,431	1·727	
1846	3,553,899	1·278	
1847	3,517,408	1·054	3,590,159 0½
1848	4,355,370	1·853	4,216,731 9
1849	3,210,888	1·244	3,109,982 2
1850	4,054,017	1·457	3,892,187 1½
1851	3,455,827	1·239	3,436,045 8
1852	4,593,380	1·593	4,460,696 11½

It seems to me highly interesting to observe within what narrow limits the fluctuations of all claims, compared with the sum insured, are found, especially in the period from 1836 to 1846. Omitting the year 1845, the limits are 1·140 and 1·347; and the deviation of 1846 must be attributed to the See Assecuranz Compagnie of 1844, the history of which we have given before. The fluctuations are more considerable in the period 1847 to 1853—the year 1848 proves the worst; how much of this result must be ascribed to the Holstein war I am not prepared to say. Nor am I prepared to say whether the preceding table would justify the conclusion, that losses in general have increased in modern times; I am sorry that it seems to indicate that the losses of insurances effected in Hamburg have become heavier. It would be highly interesting to know whether this is caused by more frequent or by more heavy

losses. The materials for an answer to this question cannot be obtained from the balance-sheets.

We have now to consider the result of the whole business.

Year.	Profit.	Loss.
	Banco marcs.	Banco marcs.
1847	918,780	
1848	19,900	
1849	503,160	
1850	..	157,700
1851	303,400	
1852	..	596,500
Total	1,745,240	754,200

Year.	Per cent. of sum insured.		Per cent. of total income.	
	Profit.	Loss.	Profit.	Loss.
1847	0·2752	..	17·349	
1848	0·0085	..	0·396	
1849	0·1948	..	11·585	
1850	..	0·0567	..	3·526
1851	0·1088	..	6·781	
1852	..	0·2069	..	12·95

A table of the profit and loss since 1836, as given by the Handelsstatistischen Bureau, states—

Year.	Profit.	Loss.	For 100 Thalers insured sum.			
			Income.	Payment.	Profit.	Loss.
	Banco marcs.	Banco marcs.				
1836	112,252	..	1·38	1·32	0·06	
1837	250,915	..	1·56	1·43	0·13	
1838	349,626	..	1·47	1·32	0·15	
1839	1,044,559	..	1·45	1·03	0·41	
1840	376,994	..	1·45	1·30	0·15	
1841	362,721	..	1·41	1·27	0·14	
1842	231,455	..	1·40	1·30	0·10	
1843	..	299,700	1·38	1·50	..	0·12
1844	..	185,921*	1·38	1·44	..	0·06
1845	..	1,180,010	1·47	1·85	..	0·38
1846	240,323	..	1·50	1·41	0·09	
1847	1,018,303	..	1·48	1·17	0·31	
1848	..	20·531	2·02	2·03	..	0·01
1849	401,368	..	1·56	1·40	0·16	
1850	..	282,265	1·50	1·60	..	0·10
1851	314,182	..	1·50	1·38	0·12	
1852	..	706·891	1·49	1·73	..	0·24
1853	306,000	..	1·55	1·46	0·08	

* Including 405,000 banco marcs of the See Assecuranz Compagnie of 1844.

I endeavoured in vain to find the key to these numbers, which I do not think to be quite correct; they demonstrate a profit of 2,343,380 banco marcs for marine insurance only.

It will be interesting to add a table showing the profits and losses of each year separately for those Companies which have published a favourable result, and for those which have proved unfortunate.

Year.	Number of Companies.	Profit.	Number of Companies.	Loss.
1847	22	Banco marcs. 918,780	0	Banco marcs. 000,000
1848	15	309,900	7	290,000
1849	18	576,200	4	73,040
1850	8	98,500	14	256,200
1851	16	357,900	6	54,500
1852	6	107,000	16	703,500
Total....		2,368,280	..	1,377,240

The dividends which have been paid to the shareholders are very considerable—they are

Year.	Companies for Marine Insurance only.	Companies for Marine Fire Insurance.	Total.
	Banco marcs.	Banco marcs.	Banco marcs.
1842	327,000	..	327,000
1843	226,000	..	226,000
1844	155,000	20,000	175,000
1845	18,000	20,000	38,000
1846	38,000	20,000	58,000
1847	202,000	30,000	232,000
1848	190,000	..	190,000
1849	212,500	40,000	252,500
1850	97,000	18,000	115,000
1851	215,000	90,000	305,000
1852	104,500	40,000	144,500
1853	207,500	60,000	267,500
Total....	1,992,500	338,000	2,330,500

The business of the different Companies is very different one from another—this we can see by comparing their average premiums; but more interesting conclusions cannot be deduced without having more minute particulars to examine than are given in the balance-sheets.

I end my essay requesting an indulgent judgment.